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FLOWERS AND HONEY

A radio talk by James I. Hambleton, apiculturist, Bureau of Entomology, delivered in the Department of Agriculture period of the National Farm and Home Hour, Monday, April 25, 1932, over a network of 48 associate NBC radio stations.

From the standpoint of the honeybee the myriads of flowers which cover this fair country were placed here expressly for their benefit. The bees secure their entire sustenance from the flowers. Pollen, upon which the young bees depend for growth and development, is the bees' source of fat and protein and, probably, vitamins. The adult bee, however, gets along quite well on honey alone.

It is not difficult to understand why the bees are dependent upon flowers, but it is not generally known that many flowers in turn depend upon bees to perpetuate the immortal cycle through which they pass.

Marriage or mating exists among the plants just as it does among man and animals, and honeybees are often referred to as the priests who perform the marriage ceremony. For many plants cross pollination by bees is indispensable to the formation of abundant and perfect seeds. Some plants, however, are entirely independent of honeybees or other pollinating insects since their pollination is effected by the wind. Wheat and corn are good examples. Some flowers are complete in themselves in that they do not require pollen from another flower to effect fertilization. But a great many of our useful plants have pollen too heavy for the wind to carry any distance. Or they have flowers with parts so arranged that it is unlikely that fertilization will be effected with their own pollen. Most of these plants depend largely upon bees for cross pollination.

Man benefits doubly from the reciprocal relationship between bees and flowers in that he has abundant crops of fruits and vegetables on one hand, and honey and beeswax on the other. The highly important part which bees play in the production of fruit and other crops is not widely recognized and neither is the product of the labor of the honeybee well enough known. Many people consider honey an ordinary sugar, but it is more than that. Its composition is almost as complex as the mystery in which the hive is enshrouded.

The nectar which the flowers secrete might be termed an excess product, for it is not known to be of use to the plant except to attract the bees as an aid in effecting cross pollination. It is rich in sugar. A great part of the sugar is in a form chemically similar to cane or beet sugar. But the bees transform it into dextrose and levulose, forms of sugar which the human body can utilize without change and without burden upon the digestive system. As levulose is sweeter than cane or beet sugar, a small amount of it goes a long way. Some even complain that honey is too sweet, not realizing that this so-called fault is really an asset in that it warns you when you have eaten enough.

Not only does honey contain simple, easily assimilated sugars, but it also contains certain essential oils which give it flavor. The exact character of these flavors depends in turn upon the kind of flower from which the bees gathered the nectar, so we find that orange blossom honey is entirely different

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from clover or buckwheat honey. These flavoring substances of honey also give warning and prevent excessive use. It would be well if all foods and drinks gave out warning signals.

In addition to the simple sugars and essential oils, honey contains in small quantities practically all the minerals which are essential to our well-being. These ingredients are kept intact, since honey is a natural food and does not have to undergo a manufacturing process before you use it as food.

The product of the bee has still other useful and little known properties. The levulose in honey is hygroscopic; that is, it absorbs moisture. In turn this characteristic safeguards health by quickly destroying disease-producing bacteria. All forms of bacteria must retain a certain amount of moisture to live. Honey extracts moisture from bacteria that come in contact with it and thus destroy them. There is no danger of honey being dirty in an unsanitary sense.

Is it any wonder that honey is more than just an ordinary sweet? Its sole source is the corollas of sweet-scented flowers, and Mother Nature was not unmindful of our needs when she placed in it, in addition to minerals and essential oils, the most easily assimilated sugars known, and made of it a sweet which does not lend itself to abusive use. Honey was given to us for a purpose and man has been wise in not attempting to change it.